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AUTHOR Wolf, Kenneth P.
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INSTITUTION Far West Lab. for Educational Research and Development, San Francisco, Calif.
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ABSTRACT

A research plan for investigating the effects of student portfolios on teaching and learning at three different school sites is described. The plan accommodates two categories of research questions: (1) broad, cross-site questions; and (2) site-specific questions generated by participants at each individual site. Data collection strategies include: (1) individual and focus group interviews with students, teachers, site administrators, and parents; (2) questionnaires; (3) classroom observations; and (4) analysis of the student portfolios. Data analysis will be ongoing and shared with participants in a cycle of collaboration that is intended to inform both the research process and portfolio implementation efforts at the sites. This information is intended to present researchers and practitioners with several models for using student portfolios, and also to provide information on the ways that student portfolios affect teaching and learning. The results of this year-long investigation will be reported in August of 1992 and yearly thereafter as the study is extended. (SLD)

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Far West Laboratory for Educational Research and Development
730 Harrison Street, San Francisco, CA 94107-1242, (415) 565-3000

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Kenneth P. Wolf

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Research Design for Investigating the Effects of Student Portfolios on Teaching and Learning

This document describes a plan for conducting field-based research on the use of student portfolios for assessing student performance. Three different sites, in which portfolios are actively in use, will be studied for one school year to determine the ways in which the use of student portfolios affects learning and teaching. The information gained at each of these individual sites will be used to identify cross-site themes and broader issues in the use of student portfolios.

The first section of the document discusses the research questions that will be investigated in this study. The next sections present the data collection and analysis strategies that will be used to address these questions. The following section presents the plan for documenting the portfolio processes and products. In the final section, criteria for site selection is discussed.

Research Questions

The design challenge is to develop a plan that flexibly accommodates the variety in specific site activities and contexts, and, at the same time, addresses critical issues in the use of student portfolios that cut across individual sites and particular portfolio approaches. The design must be responsive both to the needs of the individual pilot sites and to the overall research program.

With that challenge in mind, the following section describes a two-pronged research strategy in which a set of cross-site research questions that guides data collection across all of the individual sites is complemented by a set of research questions that is site-specific and generated by the individual sites. Collecting data on the same set of key research questions across each of the sites will allow the research to identify broadly the ways that alternative forms of student assessment affect teaching and learning, independent of particular sites or instruments, while collecting data on questions that emerge at the individual pilot sites will help to make the research more responsive to the needs of each pilot site, and will ultimately strengthen the individual assessment instruments.

Cross-site research questions include (but are not limited to):

- Effects on student learning, especially for at-risk students
- Effects on instructional practices
- Effects on professional development of teachers
- Costs and benefits of assessment
- Effects on school-level restructuring and reform
- Effects on large-scale assessment and accountability

Site-specific and site-generated questions could include questions such as:

- Effects of student portfolios on math versus science classes
- Effects of portfolios on special populations (e.g., ESL)
- Effects of process writing portfolios on science instruction
- Effects of portfolios on student self-evaluation strategies

- Effects of portfolios on student attitudes
- Effects of portfolio reporting procedures on parents

The development of the both the cross-site and the site-specific questions will be an iterative and recursive process in which the research questions are continually reframed and refined in light of the data that are collected.

The cross-site questions, broad and general in focus, are intended as frames for a more specific set of related questions. The research question on the "effects of student learning," for example, frames a set of questions that deals with issues such as the effects of portfolios on student attitudes, on student self-assessment, on student writing skills, on student motivation. The specific questions that emerge under each of these cross-site questions will be determined in part by the different emphases at each portfolio site. Student collaboration may be a goal at one site, and, consequently, an area that will receive a great deal of attention. At another site, student self-assessment may be a key area of interest.

The site-generated questions obviously cannot be determined ahead of time. These research questions will be shaped by the individual needs and interests of the participants and the particular context in which the portfolios are used. Participants may have clearly formed research questions at the outset of this research, or these questions may emerge as the process of using portfolios unfolds. The role of the researcher in this situation is to stimulate and support the

participants in framing and investigating manageable and meaningful research questions.

Question Levels

Both the cross-site and site-based research questions need to be addressed at two different levels:

- The instrument
- The institution

Gathering information about the effectiveness of the individual pilot project instruments is the main goal of this investigation. At the same time, it is also imperative to gather information about the ways that the institutional context facilitates or hinders the implementation of the assessment instrument. A portfolio project that succeeds at one school, for example, may be a dismal failure at another. Only by collecting information about the ways that the institutional context affects the implementation of the assessment instrument can a determination be made of the conditions and support that are necessary for successful implementation of alternative forms of student assessment.

Data Collection Strategies

To address these research questions, it is necessary to collect a variety of information about the various portfolio projects and institutional contexts. The following data collection strategies are proposed: Initial survey, interviews, questionnaires, observations, and reviews of student portfolios.

Data Collection Strategies

- Initial survey
  - Site characteristics
  - Instrument characteristics
- Interviews
  - Administrators
  - Teachers (focus groups)
  - Students (focus groups)
- Questionnaires
  - Teachers
  - Students
  - Parents
- Observations
  - Classroom implementation
  - Portfolio-related staff sessions
- Portfolio reviews
  - Review of individual portfolio with student
  - Review of class portfolios with teacher
  - Analysis of portfolio contents

Initial Survey

The initial survey will be conducted as early as possible in the school year. The purpose of the initial survey is to gather information about the site characteristics and the assessment instrument. The site characteristics survey will focus on identifying the participants and context of the assessment, documenting past uses of the

portfolio, and learning about future plans for developing and implementing the portfolio. The instrument characteristics survey will aim at identifying portfolio procedures and collecting portfolio materials.

Interviews

Interviews will be held with individual participants and with focus groups. The school administrator and project director will be individually interviewed. District administrators may be individually interviewed as well, if appropriate. Teachers and students will be interviewed in focus groups. Focus groups of three to five participants will be a more economical use of teachers and students time than individual interviews with each student and teacher. In addition, the dynamic interaction among the participants is likely to produce more insightful responses than individual interviews. Interviews will be conducted at least three times during the school year.

The same set of cross-site questions will be investigated at each of the three sites; however, the participants' responses—and the subsequent follow-up questions and probes—to these broad, initial questions may take distinctly different directions at each of the three sites. Responses to the question on the effects on student learning, for example, may focus on student attitudes at one site, while at another site the focus may be on students' ability to evaluate their own progress. To allow for the investigation to address the most significant issues from the participants' perspective and to keep open

the possibility to explore unanticipated issues, a "funnel approach" will be taken with the interviews. In this approach, respondents are first asked broad questions, with subsequent questions gradually narrowing in focus in light of participants' responses.

Questionnaires

Brief questionnaires will be administered to a representative sample of participants at the site. The questionnaires will ask participants to rate (on a four point scale) and comment on the effects of the portfolios on the instructional program. For students, the questionnaire will focus on the effects of the portfolio on their learning. Students will be asked to rate the effects of the portfolio on various aspects of their learning, such as content learning, attitudes, and self-assessment. For teachers, the questionnaire will focus on the effects of the portfolios on instructional practices. Similar questionnaire forms that combine ratings and comments will be used for administrators and parents.

Observations

Two kinds of observations will be conducted: observations of classrooms and portfolio-related staff sessions. The classroom observations will examine the ways that the portfolio is actually used by teachers and students on a day-to-day basis. These observations will be scheduled with the classroom teacher around both everyday portfolio activities and special events, such as formal portfolio reviews with students or portfolio celebrations. Observations will

also be conducted of significant portfolio-related staff sessions, such as portfolio development meetings or portfolio evaluation sessions.

Portfolio Reviews

Portfolio review sessions will be held with a sample of students and teachers. In addition, the contents of a representative sample of student portfolios will be analyzed. Portfolio review sessions with students will consist of the researcher and an individual student examining and discussing the contents of the student's portfolio. Students will be asked what their work reveals about their learning. Portfolio review sessions with teachers will consist of the researcher and teacher examining and discussing the contents of several different student portfolios. Teachers will be asked about the ways that the portfolio affects their instruction for that student.

Research Design Matrix

The following matrix links the project research questions with data collection strategies and can be used to guide the data collection process and development of individual data collection instruments. For example, for obtaining information necessary to answer the question on "effects of student portfolio assessment on teaching," the primary sources of information will be the interviews with classroom teachers. A good secondary source is the students. For answering the question about "the effects of portfolio assessment on accountability," for example, the primary source of information will be the school principal or district administrators. Teachers are a good secondary source of information for answering this question.

MATRIX: RESEARCH QUESTION BY DATA COLLECTION STRATEGY

	Research Questions						
	Learning	Teaching	Professionalization	Cost/Benefit	School Reform	Accountability	Site Specific
Data Collection Strategies							
• Initial Survey							
Site characteristics	✔	✔	✔	✔	✔		
Instrument characteristics	✔	✔					
• Interviews							
Administrators	✔	✔	×	×	×	×	
Teachers	×	×	×	×	×	✔	
Students	×	✔		✔			
• Questionnaires							
Teachers	×	×	×	×		✔	
Students	×	✔		✔			
Parents	✔	✔			✔		
• Observations							
Classroom implementation	×	×					
Portfolio development sessions		✔	×	✔	✔		
• Student Portfolios							
Review with student	×			✔			
Review with teacher	×	×		✔			
Review of portfolio contents	×	✔		✔			

Key

× = primary source of information about research question

✔ = secondary source of information about question

Data Analysis

Data analysis will rely on both quantitative and qualitative analyses. Quantitative data analysis procedures will be used to analyze student outcome data that are reported in numerical form. Qualitative data analysis procedures will be used to analyze all forms of data collected, including student portfolios, survey information, interviews, questionnaires, and observations.

Data will be analyzed on an ongoing basis for emerging themes. These emerging themes will be identified and then discussed with project participants. This cycle of collaboration between researcher and participants, in which participants comment on the emerging themes that have been identified by the researcher, will not only enrich and inform the research findings, it will also strengthen the portfolio process itself by providing the participants with ongoing information about the effectiveness of student portfolios. This cycle of identifying and reviewing themes with the participants will be an iterative process that will continue throughout the study.

The portfolio process and products will be examined for issues of reliability, validity, and potential sources of bias. Reliability studies will include measures of inter-rater reliability (if appropriate) and reliability of student outcomes. Validity studies will include reviewing the portfolio methods and materials for congruence with curriculum goals. Potential sources of bias will be studied through interviews with students and teachers, and by examining the results

of the assessments for differences in scores or reported performance among students by categories such as race, ethnicity, and language.

Instrument Documentation

This research and development effort has two goals: (1) to explore the effectiveness of portfolio approaches to assessing student achievement and (2) to support and document the work of the pilot projects in developing their student portfolios. The previous section described the research plan for investigating the effectiveness of portfolio assessment at each site as well as across the group of sites; the following section describes the research plan for documenting the portfolio processes and products at each site.

An important task of this research is to document both the processes of developing and implementing each individual portfolio approach as well as the portfolio products that are created at each site. Documentation of the processes will allow others to learn from the strategies that each site used in developing and administering their assessment instrument, while documentation of the products will enable the assessment instruments to be studied and potentially disseminated for use at other sites.

Documentation includes process notes and product materials on the following features of the assessment instrument:

- Goals of Assessment
- Performance Standards

- Portfolio Approach
- Scoring Criteria
- Scoring Procedures
- Reporting Methods
- Training Strategies (if appropriate)

Information on the processes will have a different focus from the information about the products. Questions about the process ask how and why; questions about the product ask what. Questions about process ask: How and why were these goals chosen? How was the portfolio developed? Questions about product ask: What are the goals of the assessment? What are the assessment tasks? Collecting information about both process and product will enable others to examine the assessment instrument itself as well as consider important issues that arose in the development and administration of the instrument.

Site Selection

We will select three different sites in which student portfolios are in use. While these three sites will all share a similar focus on portfolios, the selection process will aim to maximize the differences across sites in terms of grade level, curricular focus, and portfolio approach. Selecting three sites that differ from each other along these dimensions will allow for a broader view of portfolios and their effects on learning and teaching.

The following criteria will be observed in selecting the sites:

(1) Significant proportion of "at-risk" students at school site. Improving the education of "at-risk" students is a central aim of this research. A serious criticism of traditional forms of student assessment, such as standardized tests, is that these assessments are culturally biased and that they do not recognize the diversity in ways of communicating and thinking. Portfolio-based assessment has been touted as one method for overcoming these biases because portfolios allow for multiple forms of expression. This assertion, while compelling and attractive, is as yet unproven. The use of portfolios may "open up" assessment and reduce the possibility of cultural bias; on the other hand, portfolios may be subject to some of the same problems as traditional tests, or, given the subjective nature of portfolio assessment, even graver problems. For these reasons, research on the effects of portfolio assessment on the learning of "at-risk" students is urgently needed.

(2) Significant proportion of teachers in the school involved in the use of student portfolios. Studying the use of portfolios by individual teachers is important; studying the use of student portfolios by an entire school staff, however, can provide insights into the effects of portfolios on learning and teaching that can not be gained by studying individual efforts. When a school staff embraces student portfolios as an approach to assessment, this decision can have profound effects on such areas as the curriculum goals of the school, the professional development of the teachers, and the participation of parents in school activities. The use of portfolios by a school staff

not only requires a school-wide conversation about learning and teaching, it also provides teachers with an occasion and a structure for discussing pedagogically substantive matters.

(3) Commitment to student portfolios by the school principal. Without the commitment of the school principal, it is unlikely that a school-wide portfolio effort will sustain the necessary momentum for success. Teachers and students need the time and support to develop and implement portfolios in their classrooms. If portfolios are an added-on activity, teachers and students will likely not be able to find the necessary time to maintain them. If portfolios are integrated and embedded in the school's procedures so that they replace some of what teacher routinely do, they stand a much better chance of succeeding. If portfolios, for example, replace the traditional report card, teachers will be better able to find the time to effectively use them, students will be more motivated to construct meaningful portfolios, and parents will be more interested in what the portfolio reveals about their children's knowledge and skills. Principals are crucial in making the portfolio an integral part of the school program.

(4) Demonstrated prior commitment to and experience with student portfolios. Only sites that have already initiated portfolio assessment procedures for at least one year will be considered for inclusion in this study. This criterion is both a measure of school-wide commitment to and experience with student portfolios. Both motivation and previous involvement with portfolios are necessary

for this research on the effects of portfolios to take place. The first year of developing and implementing portfolios is often an exploratory effort that usually does not provide coherent information about the effects of portfolios on learning and teaching. Developing a school-wide student portfolio assessment system at the same time that it is being implemented is akin to building an airplane while trying to fly it. These early, exploratory efforts are less likely to provide coherent information about the effects of portfolios on teaching and learning. School staff with two or three years experience with student portfolios, however, usually have worked out most of the portfolio design problems and are ready to systematically implement portfolios school-wide and thoughtfully considered their consequences on learning and teaching.

Conclusion

This document describes a research plan for investigating the effects of student portfolios on teaching and learning at three different school sites. The plan provides for two categories of research questions: broad, cross-site questions and site-specific questions generated by participants at each individual site. Data collection strategies include individual and focus group interviews with students, teachers, site administrators, and (possibly) parents; questionnaires; classroom observations; and analyses of the student portfolios. Data analysis will be ongoing and shared with participants in a cycle of collaboration that is intended to inform both the research process and portfolio implementation efforts at the sites.

This information is intended to present researchers and practitioners with several models for using student portfolios as an assessment approach, and also to provide information on the ways that student portfolios affect teaching and learning. The results of this year-long investigation will be reported in August of 1992 (and yearly thereafter if the study extends into future years).